

# CALIFORNIA'S HEALTH

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## Public Health Aspects of Refuse Disposal\*

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For the purpose of this brief summary we should agree upon the scope of the subject indicated by the title, "Public Health Aspects of Refuse Disposal." I consider it desirable to interpret the terms broadly: for example, let us consider that refuse disposal begins in the home and includes storage and transportation; in considering landfill let us not restrict ourselves to one single pattern but include all of the many patterns of placing solid refuse onto or into the soil, including the reclaiming of tidal flats or even land normally covered by several fathoms of water at low tide; and in considering incineration let us include all types of combustion whether it be in the back yard, on an open dump, or in a municipal type mechanical incinerator. In like manner let us take a broad view of the term "public health" and not restrict our attention to the factors related to the spread of the communicable diseases but include those factors of environmental sanitation that affect the people's comfort, enjoyment of life, and general physical and mental state of well-being.

If we take this broad outlook we discover that there are at least six public health aspects that must be kept in mind in planning a solution to the problem of refuse disposal.

### Flies

Flies are a triple threat to the community: (a) they are vectors of disease, (b) they threaten the cleanliness and wholesomeness of processed foods, and (c) they may become intensely annoying as pests. Flies have

three definite requirements to permit their pre-adult life cycle to take place: food, moisture, and a temperature range between the limits of 60 degrees F. and 105 degrees F. Any refuse storage, transportation, or disposal operation which exposes relatively thin layers of unstable and decomposing organic material so as to fill these requirements for a period of as long as four days may be expected to produce large numbers of flies. Effective control may be obtained: (a) by altering the operation so that it no longer complies with one or more of the above named requirements, (b) by burial of the infested organic layer within the four-day time limit after egg deposition, or (c) by the use of chemicals.

The presence of adult flies at the site of a refuse disposal operation is always a sanitary defect but becomes really serious when the fly population pressure becomes so high that "spillage" or "overflow" to the surrounding area occurs. When this takes place flies leave their "source point" and go to an "attractant point" such as a restaurant, or home, where odors of food are present. Objective methods of measurement of fly densities at source points and the determination of "spillage" levels have been developed and are currently under study in this State.

### Rodents

Rodents, like flies, have environmental specifications but they are not as exacting as those for flies. Stated simply, the two requirements are food and shelter. Exposed refuse usually furnishes both on a lavish scale. However, an open refuse dump seldom maintains rodents in the astronomic numbers associated with flies, and probably only a fraction of a community's rats can be attributed to its refuse disposal situation. An

\*Presented at the Conference on Municipal Refuse Collection and Disposal, University of California, February 5 and 6, 1953, and published here and in the March issue of *Western City* with permission of the Sanitary Engineering Research Project of the University of California.

infested dump, for example, usually supports only a few hundred or at most a few thousand rats. The real public health concern arises from the fact that a refuse dump affords an almost ideal meeting place for field and domestic rodents. Field rodents, such as ground squirrels, are considered to be the principal reservoir of bubonic plague infection in this State, and, since the same vector flea frequently infests both field ground squirrels and city rats, a "meeting place" such as a dump affords the opportunity of transfer of infected fleas from squirrel to rat and the introduction of infection into the city rats as a whole, with resulting exposure of the urban population.

#### Air Pollution

There are two classes of air pollution related to refuse disposal. The first type results from the discharge into the air of smoke, dust, or odorous gases or vapors which are objectionable in themselves because of direct annoyance to people or damage to property or property values. These factors have tremendous importance and should play an important part in the selection of type and place of refuse collection, storage, transportation and final disposal, but they are so obvious as to require only to be mentioned here. A subtle but immensely important part which refuse disposal can play in the field of air pollution has to do with the occurrence of the urban type of smog. Smog, in California at least, may best be described as the end result of slow combustion in the atmosphere of gaseous hydrocarbon material to aldehydes, organic acids, and peroxides, and the adsorption of these irritating end products to the surfaces of extremely small or liquid particles in the atmosphere. The resulting aerosol, although invisible in single particles, may obstruct visibility, destroy or stunt the growth of sensitive plants, severely irritate the eyes and other mucous membranes of humans, and perhaps increase morbidity and shorten life; and all this with an absurdly small weight of chemically irritating substance per unit volume of air. Refuse disposal contributes to this situation principally when organic material is inefficiently burned in back yards or on open dumps, although public and industrial incinerators cannot be entirely dismissed from consideration.

Low temperature or otherwise inefficient combustion contributes to smog, first by the distillation and discharge of large quantities of hydrocarbon material into the atmosphere in gaseous form and second by the production of large quantities of smoke, much of it of very small particle size.

#### Water Pollution

Most of the refuse disposal problems in California communities are originally handled on what might be

called a "throw it behind the door" basis; that is, refuse is transported to some remote and isolated spot where it can be "thrown away" without any one being the wiser. Such remote and isolated spots are vanishing in California. The nuisance which such operations present to enveloping residential developments has made people keenly aware of some of the public health aspects of refuse disposal, but a recognition of the potentialities of pollution of either surface or ground water has not yet become general. The oxygen demand of submerged organic material in land fills and more importantly the organic and inorganic content of liquids coming from such a deposit have not received the study and consideration that they merit. Excavations may expose ground water to greater risks of pollution simply by reducing the thickness of the overlying protective soil blanket which operates both as a filter and a chemical reaction bed. A current research project being conducted at the University of Southern California under contract with the State Water Pollution Control Board is at last bringing under a systematic scrutiny this important potential threat to the quality of surface and ground waters.

#### Transportation Nuisances

The transportation of refuse may constitute the most objectionable feature of the refuse disposal problem as far as the general public is concerned. Early morning noise from handling containers; dust, dirt, and papers blown from the truck or stirred up by the truck's passing; odors; unsightliness of truck contents and spillage of liquids or solids onto the street; and the convergence of large numbers of heavy vehicles near the point of transfer, treatment, or disposal are all so offensive to a residential area that they should be given most serious consideration in the planning of the entire collection and disposal operation.

#### Change of Topography

A holdover from the concept of disposing of refuse in an isolated and remote spot is the idea that topographic changes brought about by refuse disposal operations are of no concern. The reverse is true. Landfill operations that raise the ground level in areas of flat terrain may result in interference with surface land drainage or in the creation of a "Chinese wall" obstructing view, both of which constitute a serious detriment to the environment of nearby residents.

The problem imposed by the sheer bulk of refuse in American cities may in fact sound the death knell for disposal of refuse by burial, except in areas such as San Francisco where land is actually increased in value by raising its level. If air pollution considerations outlaw the burning of combustible rubbish on the ground

surface, as has already happened in the Los Angeles area and is in immediate prospect in the San Francisco area, and if the same can be applied to back yard incinerators, the conversion of combustible refuse by composting or other means to a material which may be beneficially applied to land may become unavoidable in large metropolitan areas at an early date.

#### Current Refuse Disposal Practices

These, then, are the principal public health aspects of refuse disposal in California. When we examine the current refuse disposal practices of California communities with these factors in mind, what do we find? In general, a most unsatisfactory picture. Little attention on a planning basis has generally been given to storage or disposal of refuse on private premises, with the result that mixed garbage and rubbish frequently arrives at the point of disposal well seeded with fly eggs and frequently containing fly larvae and even pupae on the verge of emergence as adult flies. Burning of "combustible rubbish," including green lawn, shrub and tree trimmings in back yards, is controlled only by the fire laws. There is a tendency to ignore the exposure of mixed refuse between the time of collection and its final disposal. In an incinerator program, for example, if the incinerator is operated by an 8- or 10-hour-per-day basis and refuse is stored on a platform 12 or 18 hours before being put into the incinerator, the net effect with respect to flies, odors, and unsightliness may be that of an open faced dump. There is a tendency to conclude that if the standard cell type of cut and cover sanitary landfill operation is impractical for any reason, the only alternative is an open dump. There is a practice in this State of giving the operator of a public dump the privilege of incorporating into his operation the running of hogs on the dump. This practice, entirely aside from the animal and human disease aspects, which are too involved to be properly discussed here, is entirely incompatible with adherence to the public health principles I have listed. Finally, and perhaps most important of all, in most California communities the problem of refuse disposal has been approached as though it were a series of unrelated problems; "let the plumbing department decide the problem of home garbage grinders, the fire department the problem of burning rubbish on private premises, the health department the storage of garbage and refuse on private premises, a scavenger contractor the pattern of collection and transportation, the city or county engineer the location and method of final disposal, and private enterprise the problems of sorting of rubbish and the question and method of conservation of organic material for agricultural use by composting or other means." Although the cost of final disposal or treatment is prob-

ably never more than one-fourth of the total cost of refuse disposal to the householder, it has too often happened that the cost per ton of final disposal has been the sole basis of planning.

#### Basic Planning Principles

It seems to me that the solution of these problems will never come until there is recognition of their seriousness and the realization and acknowledgment that the collection and disposal of a community's solid wastes is no less important than the disposal of liquid waste and no different in principle.

If California communities can take this first big step of realization it will then follow as a natural sequence that we will use the same broad bases for planning to solve problems of solid waste disposal that we have been using for problems of sewage collection, treatment, and disposal. These bases include recognition of three principles:

- (1) In comparing alternatives on a cost basis, only those alternatives which are satisfactory from a public health standpoint can be considered.
- (2) The entire problem must be considered as one of over-all engineering analysis with the objective of discovering the solution that accomplishes storage, collection, transportation and final disposal at the lowest feasible unit cost per ton to the taxpayer after crediting the operation with any conservation or reclamation benefits.
- (3) The problem will not be properly solved by lifting any pat standard pattern from a handbook, but only by rational engineering analysis, taking into consideration local geographic, topographic, geologic, and climatic conditions, as well as the long range plans for total development of the area.

#### Long Range Planning

This last point is really at the heart of the refuse disposal problem in California. Our incorporated cities are, many of them, surrounded by fringe areas which are in reality unincorporated cities without any machinery for planning or carrying out the basic services of waste disposal. When roadside dumping becomes intolerable the governing body of the county usually provides "dump sites" and private scavengers collect refuse in the more profitable sections, the remainder being left to look after themselves. Invariably the city within such a fringe area looks outside its own boundaries for a refuse disposal site and locates it in the fringe area or in open territory which within a year or two becomes part of the fringe area. The natural resentment of residents of the fringe area against being a "dumping ground" for the city then effectively



blocks the working out of a satisfactory solution to the refuse disposal problem of the entire metropolitan district.

The key to the solution to this problem lies, I believe, in the demonstration that refuse disposal can be designed and carried out so as not to damage or blight the area of final disposal. This requires that city and county government accept the moral, financial, and technical responsibility: (a) for the development of an over-all plan based on sound analysis of cost, public health aspects, and in harmony with the general long range outlook for an area, and (b) for the competent carrying out of all phases of the refuse disposal program, either directly or by contracts drawn with adequate performance specifications so as to insure that the rights and welfare of all residents are safeguarded.

This is a responsibility of government, for the people cannot solve the problem as individuals. Scientific knowledge must be applied, however, and private enterprise must be given the opportunity to contribute the magic of American ingenuity to this long neglected problem.

### 25th Anniversary of Child Health Day Observed May 1st

The 1953 observance of Child Health Day marked the 25th year that this event has been proclaimed by the President of the United States. It was authorized by a joint congressional resolution, passed in 1928, which called attention to "the fundamental necessity of a year-round program for the protection and development of the Nation's children."

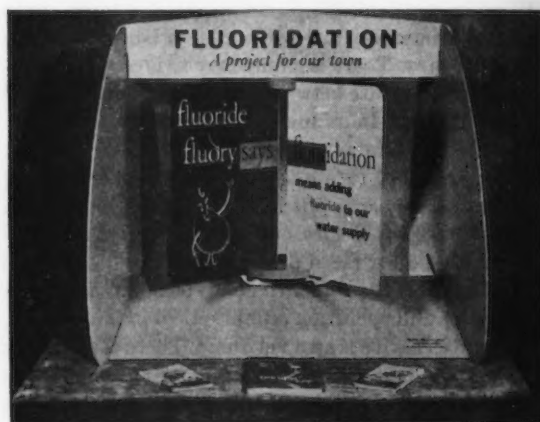
Mrs. Oveta Culp Hobby, Secretary of the new Department of Health, Education, and Welfare, issued a statement in which she said, "In the quarter century since President Coolidge issued the first Child Health Day Proclamation, through new medical and scientific discoveries and extensive public health work, our Country has made tremendous advances in overcoming many of the great physical hazards which used to threaten our children. In the words of President Eisenhower, 'We are now seeking to make as significant progress in understanding the nature of emotional health in order that our children may grow into mature, responsible citizens of a democracy'."

Dr. Wilton L. Halverson, State Director of Public Health, said, "The state and local health departments are the traditional sponsors with the Children's Bureau of Child Health Day observance. In California, public health programs the year-round carry on child health activities based on the same principles and purposes that are brought to the people's attention each Child Health Day."

### Fluoridation Exhibit Available

The portable exhibit on fluoridation shown above has been placed on deposit with the California State Department of Health by the Regional Office of the U. S. Public Health Service. It can be borrowed by any interested group in the State as scheduling will permit. Requests for its use should be channeled through the local health department to the Bureau of Health Education, 760 Market Street, San Francisco 2. If community groups in areas without full-time health departments wish to borrow it, they may send their requests directly. The only expense to the borrower is the payment of return transportation. The shipping weight is 16 pounds.

The colorful exhibit is designed for use on a table. The measurements are 2' 8" wide, 2' 4" high, and 2' deep. An attractive feature is the electrically propelled revolving turntable on which panels are mounted carrying seven different messages from "Fluoride Fluory."



Besides the message shown in the photograph "Fluoride Fluory" says: Fluoridation gives children better teeth throughout life; let's talk fluoridation with our dentists, physicians, neighbors, educators, city officials; fluoridation costs a few cents a year per person; fluoridation saves money on dentist bills; fluoridation cuts tooth decay as much as two-thirds; fluoridation is endorsed by dentists, physicians, health departments.

### Bacteriologist Position

San Diego Department of Public Health has a vacancy for a senior bacteriologist (Bacteriologist III). The salary scale now has a range of \$311 to \$378 and may possibly go to the next step after July 1st (\$327 to \$397). Inquiries should be addressed to J. B. Askew, M.D., Director of Public Health, San Diego Department of Public Health, Civic Center, Room 0170, San Diego 1, California.

## Dangers in Use of Carbon Tetrachloride and Other Common Solvents

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Warnings need to be issued at regular intervals on the dangers attendant on the use of carbon tetrachloride and other halogenated hydrocarbons commonly used as solvents. State and local public health agencies have sent out these warnings repeatedly for years, but with the ever increasing use of these solvents information about the hazards must be more generally disseminated.

The California State Department of Health through its Bureau of Adult Health has made this information available to industry, to physicians, and to a lesser degree to the general public. *Occupational Health Bulletin C* (for the public) and *Physicians Occupational Health Bulletin No. 3*, both entitled "Carbon Tetrachloride Poisoning," are available from the Bureau of Health Education, 760 Market Street, San Francisco 2.

The Division of Industrial Safety of the California State Department of Industrial Relations has recently issued an excellent leaflet on the subject called "Are You Using Carbon Tet?" Copies are available on request from the division offices at 965 Mission Street, San Francisco 3 and 357 South Hill Street, Los Angeles 13.

The *Journal of the American Medical Association* carried an editorial on carbon tetrachloride poisoning in the January 3, 1953, issue.

Carbon tetrachloride (or tetrachloromethane) is a familiar solvent for home use, yet one of the most dangerous because it can be purchased almost anywhere and often under trade names that do not indicate the presence of carbon tetrachloride. A false sense of security has been fostered by the belief that the non-flammability of carbon tetrachloride makes it safe in all respects. This idea has led users of the solvent to disregard the caution label on the containers.

### Clinical Picture

The clinical picture of poisoning from carbon tetrachloride varies with the individual exposed and depends upon the amount of chemical absorbed at any one time and the frequency or number of exposures. Brief exposure to high concentrations of carbon tetrachloride vapor may cause acute poisoning, anesthesia, or death. In lower concentrations, frequent, repeated exposure can cause headache, mental confusion, depression, nausea, vomiting, loss of coordination and sense of balance, and visual disturbances. Sooner or later, the individual will experience irreparable kidney and liver damage from these toxic exposures.

Certain persons are more susceptible than are others. Obese persons or malnourished individuals, children, and those people with existent liver and kidney disease react adversely to smaller amounts of the solvent. Users of much alcohol appear to fare worse, and the outlook for recovery is proportionately lessened. It is not known whether this accelerated reaction results from previous damage to liver and kidneys, or is due to a more rapid absorption of the solvent.

### Hazards in Home Use

Since carbon tetrachloride is five times heavier than air, the vapors tend to sink to floor level if there is no drifting by air in motion. This physical characteristic of carbon tetrachloride serves as an additional factor in possible poisonings to small children, for heavy concentrations of the vapors at breathing level can seriously injure a child in less than a half hour. A tablespoon full of carbon tetrachloride resolved to vapor in an unventilated room 10 feet long, 10 feet wide, and 10 feet high is an unsafe concentration for an adult if he were to breathe the vapor for eight hours.

The practical uses of carbon tetrachloride have increased its demand so that all members of a family may be exposed to dangerous situations. A young mother may use carbon tetrachloride regularly inside her home to clean clothes, rugs, floors, or furniture. In so doing, she may damage her kidneys so that she becomes a potential victim for toxemia during her next pregnancy. Solvents play an essential part in family hobbies, ranging through jewelry making, photography, printing, refinishing furniture, gun collecting, model making, and home repairs. Usually hobbies are pursued in basements, attics, storage rooms, or other poorly ventilated areas, which allow for gradual accumulation of vapors. Many times a boy builds models in the same room in which he sleeps.

A young girl thinks little about open windows and fresh air when she hastily spot-cleans her dress. She does not know that she should hang the dress in a ventilated area until it dries. Instead, she dons it, bundles herself up in an outer coat, and away she goes. Perhaps she blames her headache and nausea on a hurried dinner. Bedridden invalids, not physically able to undergo the conventional soap-and-water treatment, are often subjected to a dry hair shampoo (solvent). This simple procedure can react unfavorably on the invalid and the person in attendance.

Some homes have fire extinguishers which contain carbon tetrachloride. These extinguishers are practical

in open places, but can be as dangerous as the fire itself if used in enclosed areas. Carbon tetrachloride in contact with flames will decompose into chlorine compounds and phosgene, a deadly poison. It is important to remember that if such an extinguisher is used on a fire in a confined space it is imperative that everyone get out as soon as possible. The concentration of vapors is dangerous until they have been dissipated by proper ventilation.

#### Other Solvents

In consideration of possible dangers involved in the use of carbon tetrachloride, it is recommended that other less toxic solvents be used in the home. Substitution of perchloroethylene and trichloroethylene for carbon tetrachloride is suggested. These solvents are chlorinated hydrocarbons, just as is carbon tetrachloride, and also require intelligent care in their safe usage.

Acetylene tetrachloride (or tetrachloroethane) and bensol or benzene (not to be confused with benzine) are even more dangerous than carbon tetrachloride, and all three should reach the interior of a home only by rare exception.

Any of the following preparations may contain a dangerous solvent: quick-drying lacquers, paint thinners, paint and varnish removers, metal polishes, lubricants for light metals (cutting oils), rubber cements, fire-extinguishing fluids, metal degreasers, dry-cleaning fluids, insecticides, sprays, soap solutions, tar and resin solvents, dry-hair shampoos, fumigants, delousing agents.

The prudent person will use such materials only in a well-ventilated area and will avoid all unnecessary inhalation and contact with them.

#### Precautions

Points to be remembered while handling any solvent are:

1. Open all doors and windows for cross-draft ventilation. If possible, use solvents out of doors. Do not use in basements, or permit the vapors to sink down into an occupied basement.
2. Keep face away from work area, and use electric fan to blow vapors away from breathing zone.
3. Use a small cloth or sponge and protect the hands with solvent-resistant plastic gloves.
4. Do not use solvent from open pails or pans. When not in use, keep container stoppered and out of reach of children.
5. Mops or cloths wet with solvent should be dried out of doors.
6. If a solvent soaks through clothes by accident, remove them immediately and wash well with soap and

water. Do not put clothes back on the same day, even if they seem thoroughly dry.

7. If a person is unconscious from inhaling solvent vapors, remove him quickly to fresh air, and apply artificial respiration if breathing has stopped. Call a physician.

### Mussel Quarantine Starts May 1st

California's annual summer quarantine on mussels goes into effect May 1st along the entire coast of the State, including the shores of San Francisco Bay. The ban on the sale and offering for sale of mussels is usually lifted on October 31st, but it may be extended if laboratory tests show that the edible flesh of mussels still contains the deadly toxin secreted by the microscopic organism *Gonyaulax catanella*. Ocean waters teem with this organism during the warm months of the year.

No cases of poisoning from this toxin have been reported in California for five years. Three cases and one death from eating toxic mussels were reported in 1948. The first California quarantine on the sale and offering for sale of mussels was imposed July 18, 1927. Before the quarantine program was instituted many cases and often several deaths were reported annually.

### National Mental Health Week

"Fight Mental Illness—Ring the Bell for Mental Health" is this year's slogan for National Mental Health Week, May 3d-9th. Mental Health Week is observed each year as part of a national campaign under the auspices of the National Association for Mental Health, Inc. It is part of the association's public education program for the entire mental health movement. The aim is to make everyone aware of his stake in mental health and to stimulate community interest in working together to raise the level of mental health.

### "Mean, Not Median"

In the March 31, 1953 issue of *California's Health* in the article on page 142, "Gamma Globulin Supply Inadequate to Meet Polio Demands," the word "median" was used in two places where the correct term was "mean." The two sentences should have read, "This allotment will be on the basis of 40 c.e. times the mean number of reported cases for the five-year period, 1947-1951. This mean is approximately 3,000 cases, which means California's initial allotment would be approximately 120,000 c.e."



## Public Opinion on Mental Health Revealed by Survey

That most people spontaneously identify mental illness with psychoses alone, and rarely include "nervousness" in their initial reaction, is one of the findings revealed in preliminary samplings of a recent survey to measure public opinion on mental health. Supported by a grant from the National Institute of Mental Health, the study was conducted by the National Opinion Research Center of the University of Chicago, under the direction of Dr. Shirley Star, and it is expected to provide perspective and information for mental health programs. However, many of those who spontaneously associated mental illness with psychoses later brought out through their descriptions of characteristic neurotic behavior that they were aware that not all mentally ill persons are psychotic. From this, it might appear that many persons can distinguish, roughly, between psychoses and "nervous conditions"; nevertheless, there remains a tendency to consider mental illness and psychoses synonymous, although they explicitly disavow it.

Another misconception identifies "mental" with "intellectual"; consequently mental illness is viewed as an impaired reasoning function manifested by irrational behavior. Typical comments on case descriptions of mentally ill persons were "she knows what she's doing so her mind isn't affected," or "a lot of people are nervous but their minds are as good as ever." Others identified emotional symptoms, not as mental illness, but as character weakness or moral defect—e.g., "it isn't insanity because he could snap out of it if he wanted to." On the other hand, those who do view mental illness as a "character defect" use the term in a deprecating sense: "It's mental illness because he's letting it get him," or "he just hasn't the strength to fight it."

Other beliefs recorded are those which regard "nervous conditions" or any nonpsychotic illnesses as conditions that may either disappear or be cured through treatment, while the psychoses are generally regarded as incurable. One misconception, the investigators found, limits the concept of psychoses to illnesses that are manifested by violence and crime. Another popular idea is that quantity and not quality of behavior distinguishes the psychotic from the neurotic. As an example, the monomaniac may act psychotic at times, but if his aberrations occur in only a few areas of behavior and thinking, he is not regarded as mentally ill.

"Nervous breakdown" is probably more popular than any other term used by laymen to define behavior characteristic of the neuroses, but it is very loosely used. Descriptions of the breakdown by those inter-

viewed, varied from momentary hysteria to obviously psychotic episodes, although the chief tendency was to compare its symptoms with those of neurasthenia. Many asserted they did not regard the behavior pattern of the nervous breakdown as mental illness, and their supporting reasoning was very revealing. For many, the initial mind-body idea of "the physical" and "the mental" is expanded to include "the nervous"; the latter being considered neither quite physical nor mental. Consequently, many people believe that mental illness originates in the brain while a nervous breakdown centers in the "nervous system." Here the feeling is very evident that the "mind" is separate from the nervous system and hence neither affected by nor responsible for its malfunctioning. Among those who feel that the nervous system is related to "the physical," the nervous breakdown was viewed as a physical illness—conversely, it was termed a mental illness by those who feel that "the mental" and "the nervous" are related.

There is also a general tendency to feel that where a nervous breakdown can be traced to realistic difficulties in environment (family troubles or unfavorable job conditions), the resulting behavior could not be classified as mental illness. On this basis, only those mental or emotional disorders which cannot be traced to any "real" causes regarded as external to the physical organism or to the immediate environment are to be classified as mental illness precisely because they are "only mental" or "all in the mind."

Reprinted from *The National Mental Health Program "Progress Report,"* National Institute of Mental Health, U. S. P. H. S., February, 1953.

## Health Officer Changes

Dr. Kenneth W. Haworth has resigned as Napa County Health Officer and has joined the staff of the State Department of Mental Hygiene.

Dr. Lawrence Welti was elected to the Napa County Health Officer position on April 1st.

Dr. George F. O'Brien, who is full-time health officer of Stanislaus County, is now health officer of Merced County as well, under a temporary contract between the boards of supervisors of the two counties. Dr. O'Brien will serve in the dual capacity until the employment of a permanent health officer for Merced County.

An estimated 66,000 eye accidents occur every school year among American children, 750 of them so serious that the child loses the sight of an eye.—National Society for the Prevention of Blindness, in a pamphlet, *Eyes for the Future*.

## Civil Service Examinations

### State Department of Public Health

**Chief, Bureau of Maternal and Child Health.** Nation-wide, nonpromotional. Final filing date: May 21, 1953. Salary range depends on candidates professional qualifications. Range B is \$782-\$950; Range C is \$821-\$1,000. Application blanks and further information about the position and requirements are obtainable from the State Personnel Board in Sacramento, San Francisco, Los Angeles, and at the local California Department of Employment Office. The Sacramento address of the board is 1015 L Street.

### San Mateo County

**Social Worker I.** Salary range \$252-\$314. Final filing date: June 15, 1953.

**Social Worker II.** Salary range \$314-\$392. Final filing date: June 15, 1953.

**Sanitarian.** Salary range \$314-\$392. Final filing date: May 11, 1953.

Application blanks and further information may be obtained from the San Mateo County Civil Service Commission, Redwood City.

## Fresno County Survey Ends—X-rays 85 Percent

The Fresno County Chest X-ray Survey terminated its miniature film phase on February 28th after five weeks of intensive activity, which involved 18 Public Health Service X-ray units, both of the State Health Department units, and the services of hundreds of professional and volunteer workers. From the standpoint of community response, it was the most successful film survey ever done in California: 85 percent of the adult population of the county stood before the machines and had chest X-ray pictures taken.

Of the 165,810 small films developed, 5,887 (or 3.6 percent) showed abnormal findings; 2,434 of these were regarded as suspicious for tuberculosis of the lungs. Other conditions that may be discovered in those persons whose pictures showed abnormalities are heart conditions, malignant or benign lung tumors, and fungus diseases of the lungs. Any of those showing suspected abnormal conditions are X-rayed with 14 x 17 film and if abnormal findings persist they are referred

for the purpose of establishing diagnosis and instituting proper treatment.

Based on the experience of previous surveys, about one-tenth of the persons suspected from the small film pictures of having tuberculosis will ultimately be proven to have active cases. Thus, the Fresno County survey in a short period of time has enabled the health department to uncover approximately 250 persons who will be given the opportunity to receive proper treatment, and whose hospitalization will be a great step forward in the control of tuberculosis in Fresno County.

## Review of Reported Communicable Disease Morbidity—March, 1953

### Diseases With Incidence Exceeding the Five-year Median

Diseases	March, 1953	March, 1952	March, 1951	Five-year median
Amebiasis	39	22	37	28
Food poisoning	30	15	7	15
German measles	2,074	1,398	616	616
Hepatitis, infectious	59	38	39	39
Influenza	586	546	2,365	546
Poliomyelitis	85	53	39	48
Rabies, animal	18	4	8	8
Salmonella infections	37	44	10	9
Shigella infections	56	33	20	29
Typhoid fever	8	4	5	6

### Diseases Below the Five-year Median

Diseases	March, 1953	March, 1952	March, 1951	Five-year median
Brucellosis	7	4	8	10
Chicken pox	4,457	7,903	4,884	7,548
Diphtheria	1	7	13	39
Encephalitis	1	3	4	4
Measles	5,175	5,109	9,471	9,471
Meningitis, meningococcic	39	41	34	41
Mumps	3,852	3,432	1,707	4,191
Pertussis	226	378	185	378
Streptococcal infections, respiratory, including scarlet fever	747	1,037	861	822
Tetanus	1	---	9	6

### Venereal Diseases

Diseases	March, 1953	March, 1952	March, 1951	Five-year median
Syphilis	539	711	756	1,129
Gonococcal infections	1,270	1,025	1,291	1,794
Chancroid	15	56	29	1
Granuloma inguinale	3	1	4	1
Lymphogranuloma venereum	6	6	8	1

<sup>1</sup> Median not calculated.

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